朝比奈泰彦*: 地衣類雑記 (§206)

Yasuhiko ASAHINA*: Lichenologische Notizen (§206)

§206. Occurrence of *Usnea undulata* Stirt. in Oceania and Pacific districts of Asia.

The two specimens No. 45 and No. 46 of Almborn: Lichenes africani were identified by Motyka as *Usnea undulata* Stirt. At a glance one might hesitate to accept this identification readily, because they exhibit morphological difference so distinctly: No. 45, thallus fruticose; branches tapering gradually toward the apices and lateral cilia poorly grown, whereas No. 46, thallus of tafty growth, branches caespitose, attenuated abruptly toward the apices and richly ciliated. Despite of these morphological differences they revealed the same medullary reactions and the same chemical ingredients (see below).

My ardent wish to examine stock specimens of the same species preserved in the herbarium of Lund was rendered possible by the kind cooperation of Dr. Almborn.[1]

After some hesitation I came to the conclusion that No. 45 and No. 46 of the exsiccata above mentioned represent the limits of variation circle of one and the same species *Usnea undulata* Stirt. and are connected with intermediate forms.

On the basis of this viewpoint I can not but identify a number of specimens collected in Oceania and Pacific districts of Asia with *Usnea undulata* Stirt., growing localities of which were known hitherto within southern Africa alone.

Usnea undulata Stirt.

Synonymy cfr. Motyka, Monograph., p. 517.

Medulla K+ lutescens mox rubescens, P+ profunde aurantiacolutescens. Acidum usnicum, acidum norsticticum, acidum salacinicum et acidum galbinicum[2] continens.

To prove the presence of these lichen substances, a small sample is treated, at first, with cold benzene, which removes a large portion of usnic acid. Then the same sample is extracted with cold ether and at last with hot acetone. The dried

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1) I am very much indebted to Dr. Almborn, who sent me a number of stock specimens of *Usnea undulata* Stirt. on loan. Y. Asahina

2) Cfr. Asahina: J. Japan. Bot., **38**: 225-228. 1963.

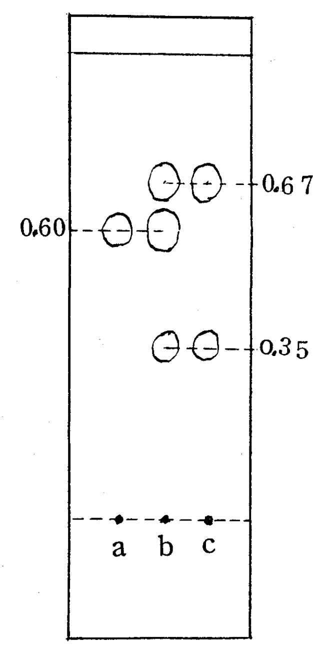


Fig. 1. Chromatogram of the acetone extract.
a-Starting point of galbinic acid (Rf 0.60). b-Starting of the acetone extract of *U. undulata*. c-Starting of norstictic acid (Rf 0.67) and of salacinic acid (Rf 0.35)



Fig. 2. o-T compound of galbinic acid.

acetone extract contains norstictic acid, salacinic acid and galbinic acid, which are conveniently demonstrated by chromatography. (Fig. 1)

If the presence of galbinic acid proved to be positive, then the ether extract, though a very small amount, is treated with o-T solution under cover glass and heated for a moment gently. Yellow granules[3] (diam. 5-8 μ), mostly connected in groups make their appearance. The same granules are also formed by the application of o-T reagent on the above mentioned acetone extract. But it is difficult to distinguish them from the o-T compounds of the contaminated norstictic acid or of salacinic acid. To prepare a reference sample of galbinic acid on demand, thalline piece (about 2 cm^2) of *Parmelia galbina* Ach. is extracted in a burette tube at first with hot benzene, which removes atranorin, and then with hot acetone. The dried acetone extract consists chiefly of galbinic acid contaminated with a small quantity of atranorin.

f. **fruticans** Asahina nov. form.

Thallus fruticosus, subsympodialiter ramosus, ramis patentibus, apicibus elongatis, sensissime attenuatis, ciliis lateribus sat raris vel hinc inde interruptis.

No. 45 of Almborn: Lichenes africani represents this form.[4]

Following specimens match well with the above form.

3) Cfr. Fig. 2.

Specimens collected in New Guinea.

Eastern Highland District: Obihaka Coffee Plantation, west of Goroka, 1590 m. (Syo Kurokawa, Nos. 5965, 5966, 5967, 5968, 5971, 5973, 5974, 5975, 5976, Nov. 16, 1965). Western Highland District: Kuno Saw Mill, logging Area, 15 miles east of Mt. Hagen, 1800 m. (Syo Kurokawa, No 6233, Nov. 24, 1965).

Specimens collected in Australia.

Fig. 3. *Usnea undulata* Stirt.
A. form. *fruticans* Asahina. B. form. *perspinigera* Asahina (Almborn: Lichenes africani)

4) A specimen No. 45 contained in another set of Almborn: Lichenes africani, though morphologically almost identical with the former one, showed medullary reactions K+ lasting yellow, P+ miniate red (indicating the presence of stictic acid) and should be excluded from the members of *Usnea undnlata* Stirt.

New South Wales: Dorigo to Megan Road, 7 miles north of Dorigo, 820 m. (Syo Kurokawa, Nos. 5293, 5295, Oct. 29, 1965). New South Wales: Western side of the road Lindesay Highway, 7 miles north of Tenterfield, 1100 m. (Syo Kurokawa, No. 5399). New South Wales: *Casuarina* and *Melaleuca* thicket, eastern side of the road, 13 miles north of Kempsey, Pacific Highway. (Syo Kurokawa, No. 5233, Oct. 29, 1965). Queensland: Maiala National Park, Mt. Glorious, 700 m. (Syo Kurokawa, Nos. 5500 pp., 5508. Nov. 1, 1965).

Specimens collected in Borneo.

Mt. Kinabalu: Kundasang, 1350 m. (M. Togashi, No. 66968 d. Sept. 27, 1966).

Specimens collected in Formosa.

Prov. Nantou: Chito. (Syo Kurokawa, Nos. 1398, 1405, 1406, 1408 b. Jan. 30, 1964).

Specimens collected in East Nepal.

Bilbatay Bhanjang. (M. Togashi, without number. Oct. 25 and 27, 1963).

Dumhan-Taplejung. (M. Togashi, without number. Nov. 2, 1963).

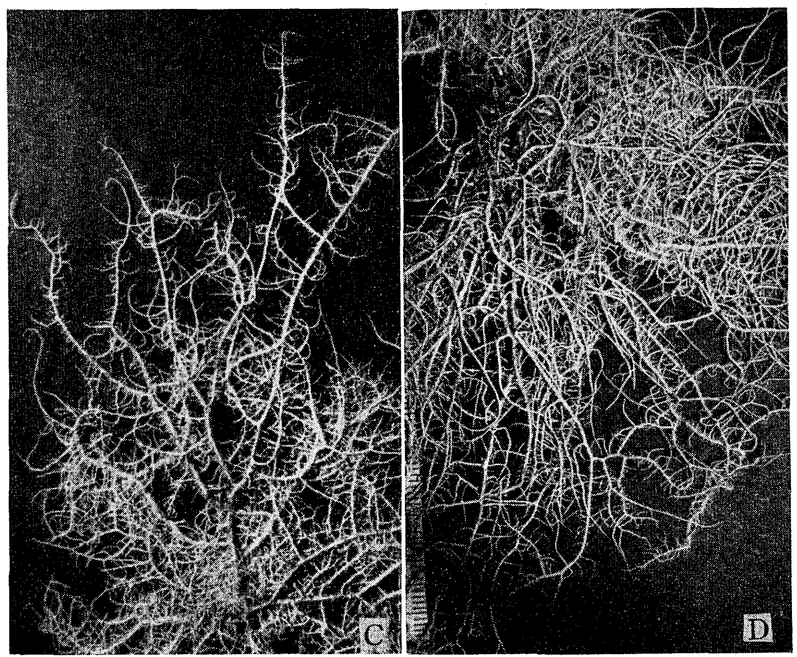


Fig. 4. *Usnea undulata* Stirt. f. *fruticans* Asahina
C. Specimen collected in New Guinea, Krok., no. 5967. D. Specimen collected in Australia, Krok. no. 5293.

f. **perspinigera** Asahina nov. form.

Thallus fasciculatus, ramis apicibus abrupte attenuatis, ciliis lateribus densis.

No. 46 of Almborn: Lichenes africani represents this form. Following specimens agree well with the above form.

Specimens collected in New Guinea.

Obihaka Coffee Plantation, west of Goroka, 1590 m. (Syo Kurokawa, No. 5970. Nov. 16, 1965). Korn Farm, Mt. Hagen, 1700 m. (Syo Kurokawa, Nos. 6152, 6153. Nov. 22, 1965).

Specimens collected in Australia.

New South Wales: *Casuarina* and *Melaleuca* thicket, eastern side of the road, 13 miles north of Kempsey; Pacific Highway. (Syo Kurokawa, Nos. 5234, 5233. Oct. 29, 1965). Queensland: Maiala National Park, Mt. Glorious, 700 m. (Syo Kurokawa, Nos. 5506, 5507. Nov. 1, 1965).

Specimens collected in Java.

Mountain Garden of Tjibodas, 1400 m. (Syo Kurokawa, Nos. 2219, 2220, 2229, 2231, 2293. March 12-14, 1964). V. Schiffner, Iter Indicum 1893/4, No. 2931 sub *Usnea mollis* Stirt. det. A. Zahlbruckner.

Specimens collected in Borneo.

Mt. Kinabalu: Kundasang, 1350 m. (M. Togashi, Nos. 66967, 66968, 66968 a, b, c, d. Sept. 27, 1966).

Specimens collected in Formosa.

Prov. Nantou: Chito. (H. Masuda, No. 33103. Oct. 30, 1933). (Y. Asahina, No. 33124. Dec. 24, 1933).

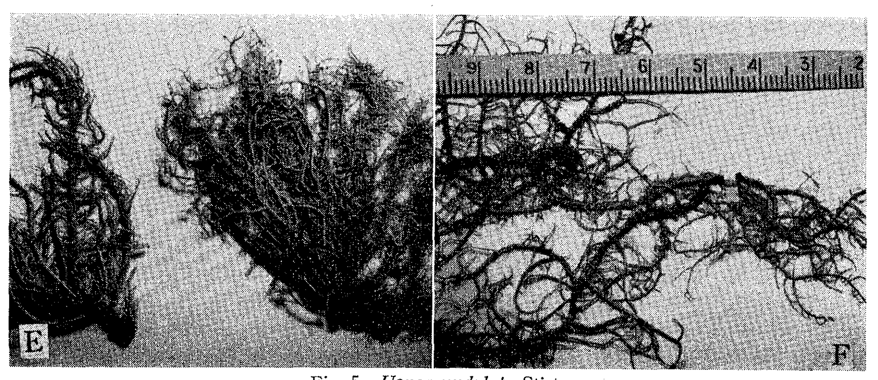


Fig. 5. *Usnea undulata* Stirt.
E. f. *perspinigera* Asah. Specimen collected in Borneo (Kinabalu), Togashi 66968 b. F. f. *fruticans* Asah. Specimen collected in Borneo (Kinabalu), Togashi 66968 d.

Among Japanese specimens *Usnea kinkiensis* resembles closely *Usnea undulata* Stirt. f. *fruticans* Asahina. Also *Usnea spinigera* Asahina resembles *Usnea undulata* f. *perspinigera* Asahina but lacks galbinic acid.

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近頃東京の国立科学博物館に，Upsala の Santesson 博士から送られた腊葉集 Almborn: Lichenes africani の No. 45 と No. 46 とは，共に Motyka 博士の鑑定で *Usnea undulata* Stirt. となって居るが，一見した所では，可なりの形態的差異を認めない訳には行かない。然し両者共髄反応が同一であるのみならず，含有成分も全く同一で，ウスニン酸，ノルスチクチン酸，サラチン酸の外にガルビン酸を含んで居る。そこで此の腊葉集の発行者である Almborn 博士に，上記番号の予備品を検査したいと申入れた処，快諾されて多数のストック品を送って貰った。これ等の標本を検査した結果，No. 45 と No. 46 とを別種と踏切るよりも，Motyka の考え通り，*Usnea undulata* といふ同一種の両極端品であると見る方がよいと思われた。この見地からすると，近年筆者が黒川逍君や富樫誠君の東南アジアや濠洲，ニューギニアでの採集品を検査した中にも，此の南アフリカ産の *Usnea undulata* Stirt. と同定せざるを得ないものがあることを発見したので，それ等標本の産地を明らかにし，分布範囲の拡張を報告する次第である。

□日野隆之：**熱帯の果物**　A 5 原色図 28，白黒図 10 共 26 pp.，索引 2 pp.，境港植物検疫協会，15，3，1967，非売品。著者は農林省神戸防疫所境港出張所の所長で，横浜防疫所勤務の頃から，輸入果物の検疫に従事し，その植物の名称につき苦労された人で，長い間それを記録され，それをこのたびまとめたのがこの冊子である。28枚の原色写真と 5 種類の白黒写生図により，現在の輸入果物がよくわからしてあるので，果物輸入史の好資料である。とりあげてある種類は45種におよんでいるが，一般的のものは説明だけで図はないが，珍らしいものはほとんど図録されている。　　（久内清孝）

□**The world of learning** (Dictionary of The World's Universities, Colleges, Learned Societies, Libraries, Museum, Art Galleries and Research Institutes). ed. 16 1965-66. pp. 1443, Europe Publication, Ltd., London. 大分前からあるものだが，学術的な機関の所在地，その構成内容を簡にして要をえた形式で紹介，はじめに UNESCO からはじめて国際的な学会連合等を，ついで 156 国の大学，研究所，博物館，学会等に及ぶ。調査書への各国の反応の仕方で精粗の差はあるが，主体は誰がそこに関係しているかという点で，よその国の学術の大勢の手掛りをつかむによい。　　（前川文夫）